Guide by John Flanagan

Passion Integrity Expertise Teamwork

Revit Architecture: Phases 1

In this White Paper we will look at what Phases are, when it is appropriate to use them and exactly how they are used.
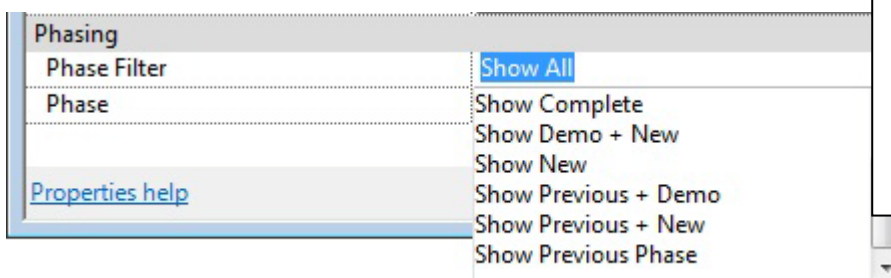
All Revit users

Introduction: Phases

Phasing in Revit gives us the ability to apply the fourth dimension – or time – to our projects. Revit's approach to phasing is simple and straightforward. A simple timeline is established for the project that includes one or more phases. The out of the box project template includes just two phases: ''Existing'' and ''New Construction''. You can add additional Phases as the project dictates. To add or edit phases, choose Phases from the Manage tab on the Ribbon.

Instance Properties - Phasing and Filter Categories

Fig 1: Phase Categories

In instance properties, you will see phasing category. There are two parameters here: phase created and phase demolished.

New Construction will be used by default, your newly created building elements will be in this phase. If you are working on a renovation project or building expansion project, you can change the element phase to previous phase: existing. If there are any building elements you need to demolish, you can define when the element should be demolished.

Fig 2: Filter Categories

Understanding How Design Phase Works: Geometry Phase

Project Phases: Every element in your Revit Project exists at a period in time defined by the phasing parameters. These are the phase when the element was created and the phase when it was demolished. You can find these settings in the element properties dialogue for a selected element. Every element must be assigned to a creation phase, but the Phase demolished parameter can be set to ''none''. In other words, all elements must be created at some point in time, but they may or may not be demolished during the life cycle of the project.

Working with Phases – Procedure

Simple wall exercise: Here is a simple exercise to illustrate each of the phases in a single view.

➢ First open a new project using a default template.

➢ Next draw four walls in parallel.

By default, all of these walls have been created in the New Construction phase because the phase of the view is New Construction. Now, selecting each of the four walls, associate them with each of the following phase settings:

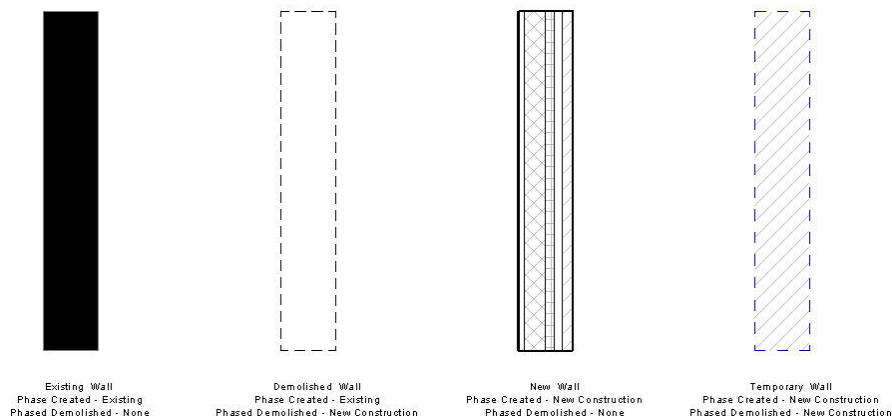Wall 1: Phase Created: Existing / Phase Demolished: None

Wall 1: Phase Created: Existing / Phase Demolished: New Construction

Wall 1: Phase Created: New Construction / Phase Demolished: None

Wall 1: Phase Created: New Construction / Phase Demolished: New Construction

As the phase properties are changed to different combinations, we see how the wall changes graphically.

Fig 3: Parallel Walls

Existing Wall
Phase Created - Existing
Phased Demolished - None

Demolished Wall
Phase Created - Existing
Phased Demolished - New Construction

New Wall
Phase Created - New Construction
Phased Demolished - None

Temporary Wall
Phase Created - New Construction
Phased Demolished - New Construction

The graphic changes occur due to **the Graphic Overrides** that are set back in the Phasing dialog box that is found in **Settings - Phasing.** The **Graphic Overrides** tab will allow **you to** change the appearance of each phase state.

Understanding How Design Phase Works: View Phase

Phase Filters

A phase filter is a rule that controls the appearance of model components in a view. It determines the phases that are displayed in a view and how they are displayed.

You define phases and phase filters for views in a project. You can also make multiple copies of a view and apply different phases and phase filters to the copies of the view.

Fig 4: Default Phase Filters & Phase Display Conditions

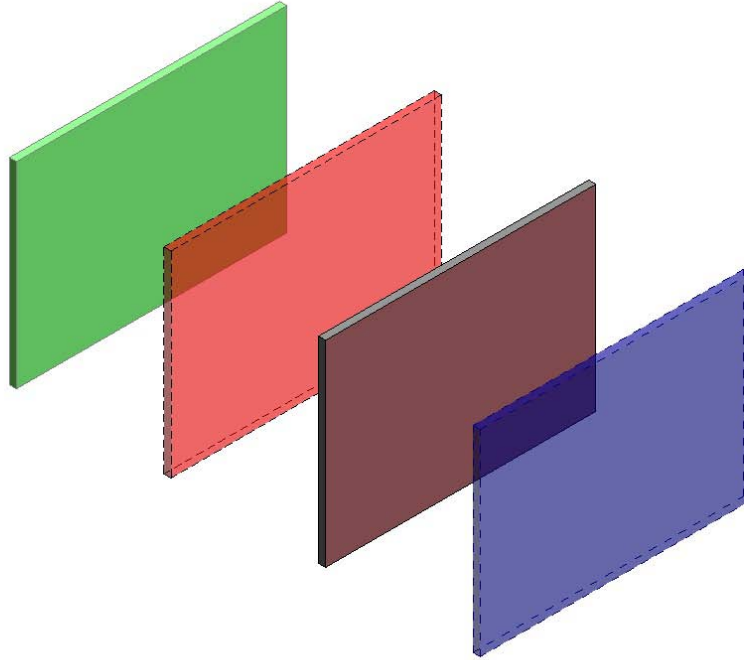| Phase Filter	Description
Show All	Displays new, existing, demolished, and temporary components in the current phase. Components demolished in earlier phases are no longer displayed.
Show Demo + New	Displays demolished and new components.
Show Previous + Demo	Displays existing and demolished components.
Show Previous + New	Displays existing and new components.
Show Previous Phase	Displays all elements from the previous phase.
Show New	Displays new components.
Show Complete	Displays both existing and new construction; that is, the entire project.

Each phase condition can have one of the following phase display conditions.

Phase Display Conditions	Description
By Category	Displays components as defined in Object Styles in the Visibility/Graphics dialog box.
Overridden	Displays components according to definitions on the Graphic Overrides tab.
Not Displayed	Does not display the component.

Applying each of these filters will help you understand the implications of how this will affect the properties of what will be shown in a view and how it will be shown.
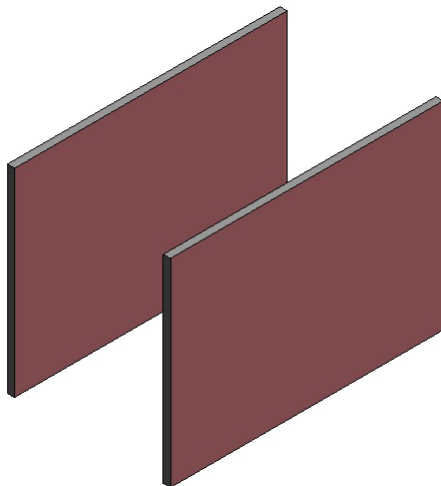
First, let's start by changing the phase to New Construction and set the phase filter to Show All (Fig 5). This will show all the elements and override their graphic based on their construction phase and whether they're demolished. And it gives us a sense of all the elements as they exist in time.

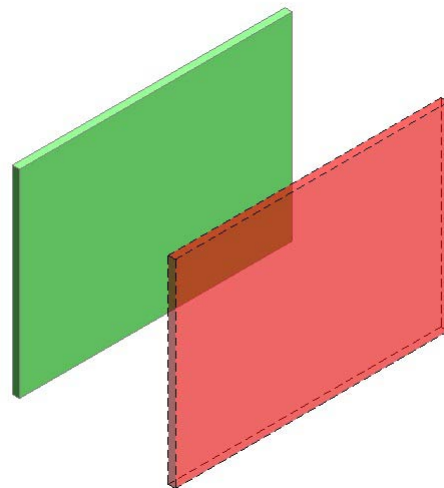**Fig 5: Show All and New Construction**

Now let's start moving through each of the sequences. But here's the important part. Rather than sequentially moving through the various phase filters from top to bottom, let's move through a sequence that makes sequential sense.

Fig 6: Existing Phase Only

Let's start by setting the Phase Filter to Show All, but setting the phase back to Existing. This will only show the object created in the Existing Phase – and their graphics are not overridden.

Fig 7: Show Previous + Demolished

Now set the phase to New Construction and select the Show Previous + Demo filter option. This shows both existing walls (the walls from the previous phase). And one of the walls is clearly being demolished.
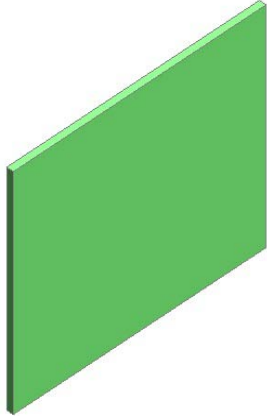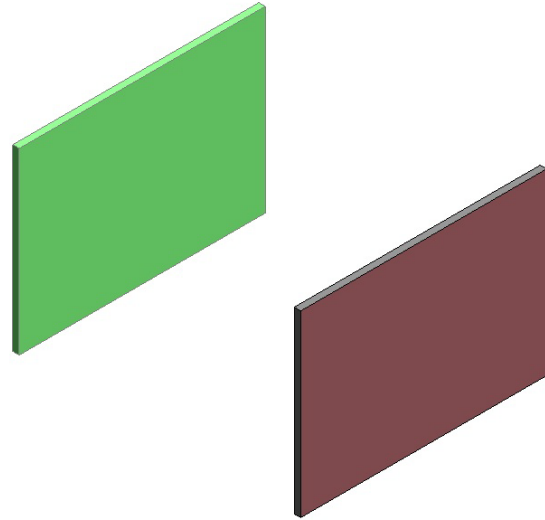
Fig 8: Show Previous Phase

Fig 9: Show Previous + New

Now let's select the Show Previous Phase option in the phase filter. Maybe a better name would be Show Existing to Remain because the demolished elements are no longer shown.

Now we'll move forward another moment in time and set the phase filter to Show Previous + New. This will show only the remaining elements (not any of the demolished content) from the present and previous view.

I hope this White Paper helps to clarify the procedures involved in applying Phases to your Revit Projects. Remember as you work, you can switch between views to add or edit geometry or simply edit the properties of an element to change its Phase settings after it is drawn.